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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/288,943 | 04/09/1999 | STEVE INGISTOV | ARCO-25.195 | 8048 |

7590 01/26/2004
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EXAMINER

KWON, JOHN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3747

DATE MAILED: 01/26/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/288,943

Applicant(s)

INGISTOV, STEVE

Examiner

John T. Kwon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003 and 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchard (US 5,630,590). Bouchard discloses that

A stationary gas turbine engine (col. 2, lines 39-40) for a power plant, comprising:

(a) a multistage axial compressor (10), the compressor (12) having a rotor, the rotor having a cylindrical land region downstream of a last-stage of the compressor (30), the land region having an outside diameter D;

(b) a turbine (28) shaft-coupled to the rotor of the compressor (12);

(c) a combustor fluid coupled between the compressor and the turbine;

(d) a stationary inner barrel member downstream of the compressor, air flowing from the compressor to the combustor passing outside of the inner barrel member, a chamber within the inner barrel member forming a passage for cooling air (42) from the compressor, the cooling air flowing from the chamber and being mixed with combustion gases upstream of the turbine;

(e) a brush seal (60) for restricting air passage into the chamber from the compressor, the brush seal comprising:

(i) a ring-shaped holder (48);

(ii) a multiplicity of bristle members (66, 68) extending radically inwardly from the holder (48) toward the land region of the rotor (22), outer extremities of the bristle members being rigidly retained relative to the holder; and

(iii) means for fastening the holder (54) to the inner barrel member,

wherein, when the power plant is inactive, the bristles have an ambient temperature clearance of not less than 0.015 percent of the diameter D from the land region of the rotor (not shown in Bouchard).

The difference between the prior art reference and the instant invention is the specified clearance of the bristle of the brush seal at the ambient temperature. It would have been considered to be an obvious choice of mechanical design because one skilled in this art is familiar with basic fluid mechanic and normally has the laboratory test facilities. To optimize or select the suitable clearance would be within the ability of ordinary skilled in this art.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson (US 5,308,088). Atkinson discloses a brush seal (20) mounted on a non-rotating member (12) in a gas turbine engine. The brush seal comprises a ring holder (14), a multiplicity of bristle members (20) extending radically inwardly from the holder, and means for fastening the holder (13). Moreover, Atkinson discloses a safety margin of the clearance of the brush seal (Col. 1, lines 55-60 and Col. 2, line 54 - Col. 3, line 9). The difference between the prior art reference and the instant invention is the specified clearance of the brush seal at the ambient temperature. It would have been considered to be an obvious choice of mechanical design because one skilled in this art is familiar with basic fluid mechanic and normally has the laboratory test facilities. To optimize or select the suitable clearance would be within the ability of ordinary skilled in this art.

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Although Atkinson does not disclose the specific location of the brush seal in the compressor section of the gas turbine engine, it is a common practice to use the same sealing member in either side of the turbine engine because the structure of the compressor and the structure of the turbine is the same. Thus, choosing the suitable location for the seal would be within the ability of one of ordinary skilled in this art.

(The rejection of claims 42-52 is purposely separated from the rejection in paragraph 2. This rejection is the same as the office action mailed June 4, 1998, 08/892,738)

Claim 42-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchard (US 5,630,590). Bouchard discloses a gas turbine engine with a brush seal (60) for restricting air passage into the chamber from a compressor. The difference between the prior art reference and the instant invention is the specific dimension for the seal clearance. In regard to the claimed particular dimension for the brush seal clearance, one skilled in the art is familiar with fluid mechanic and is aware of the necessity to design the seal for a maximum efficiency as well as the durability as major factors. Therefore, to optimize or select the suitable dimension for the clearance is within the ability of one of ordinary skill in the art. If such dimensional relationship is critical, the applicant has the burden of providing such criticality. In re Swenson et al, 30 CCPA 809, 132 F.2d 1020, 56 USPQ 372; In re Scherl, 33 CCPA 1193, 156 F.2d 72, 70 USPQ 204.

Response to Arguments

Applicant's arguments filed October 20, 2003 and November 3, 2003 have been fully considered but they are not persuasive.

Regarding claim 41, the applicants asserts that the scope of the present invention and Bouchard (of US 5,630,590) is the substantially the same. The examiner disagrees because

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claim 41 (of the applicant's) and claim 1 of Bouchard (US 5,630,590) are different scope of the inventions. Bouchard (of US 5,630,590) relied upon the arrangement of the seals such as a brush seal in tandem with a knife seal, while the claim 41 (of the applicant's) relied upon the clearance of the bristles of the brush seal at the ambient temperature. Since two inventions are different, the applicant may overcome the rejection by submitting the affidavit (see MPEP 706.02(b), overcoming a 35 U.S.C. 102 Rejection Based on a Printed Publication or Patent).

Applicants further asserted that the effects of the invention are different. The examiner disagrees because 1) the differences noted by applicants are not reflected in the claim language, 2) there is no structural differences, thus both could be the same effects.

Applicants assert that, since Atkinson (of US 5,308,088) teaches a turbine for aircraft industry and applicant's invention is directed to a gas turbine for power plant, this difference renders applicants' invention patentable. This argument fails because **limitations found in a preamble** are not afforded the effect of a distinguishing limitation unless the body of the claim sets forth the structure which refers back to the preamble. *In re Casey*, 152 USPQ 235, (CCPA 1967). *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Since the scope of claim 41 is different from Bouchard, the Group director's approval is not required.

The applicant further assert that there is no suggestion to provide the suitable spacing around the brush seal so that some air leakage can occur, nor to locate the brush seal at the intermediate area between an air compressor and the turbine, these differences render applicants' invention patentable. The differences noted by applicants are not reflected in the claim language. Moreover, the examiner disagreed because the test for the teaching or the obviousness of a reference is what the reference would teach one skilled in the art and not whether its structure could be bodily substitute in the basic reference structure. Furthermore, Atkinson teaches to

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provide the suitable spacing/clearances between the rotor and the non-rotating surface (Col. 2, lines 54-66). Since the compressor and the turbine is the same structure, but different function (a compressor which is located in front of the turbine to drive the turbine) in the same device, the teaching of using the sealing is relevant.

The applicants asserted that the structural difference in claim 42 does not shown in Atkinson. However, claim 42 was rejected by Bouchard (US 5,630,590), not Atkinson.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

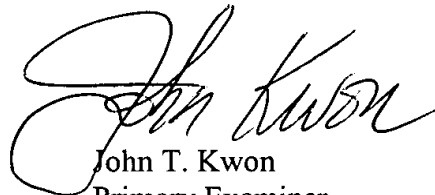
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John T. Kwon whose telephone number is (703) 308-1046. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7766.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



John T. Kwon
Primary Examiner
Art Unit 3747

January 12, 2004